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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/567,810	02/09/2006	Oren Pereg	0004809USU/2279	7166
Charles N.J. Ruggiero OHLANDT, GREELEY, RUGGIERO & PERLE, L.L.P. 10th FLOOR One Landmark Square Stamford, CT 06901-2682			EXAMINER ABEBE, DANIEL DEMELASH	
			ART UNIT 2626	PAPER NUMBER
			MAIL DATE 06/11/2009	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/567,810

**Applicant(s)**

PEREG ET AL.

**Examiner**

Daniel D. Abebe

**Art Unit**

2626

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 23 March 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-11 and 13-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 and 13-20 is/are rejected.
- 7) ☒ Claim(s) 21-23 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/S508)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

***Claim Objections***

Claim 13 is objected to because of the following informalities: the claim depends on claim 12 which has been cancelled. Appropriate correction is required.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-11 and 13-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gorin et al. (7,295,970) and in view of Burges et al. (2004/0260550).

As to claim 1, Gorin teaches a speaker segmentation method for associating speech data with speakers, comprising the steps of:

Receiving speech signal (Fig.2, 202);

Performing front end processing to obtain feature vectors (204; Col.5, lines 20-35);

Generating model parameters from the feature vectors where the speech data is divided into distinct non overlapping segments (Col.5, lines 40-50; Col5, lines 18-20, Claim 14);

Initial segmentation (206) of the speech data by detecting acoustic changes within the speech data,

Modeling and classification (final segmentation and clustering, 210, 212) of the speech segments by iteratively processing the initial segmentation to associate the segment with the speaker (Fig.3; Col.4, lines 31-40, 50-60); and

A scoring step where each segments are compared to speech samples and assigned scores (Fig.5)

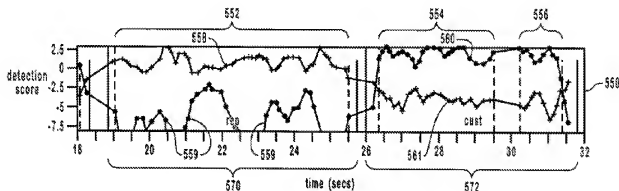


FIG. 5

It is noted that Gorin doesn't explicitly teach the anchoring step. Gorin instead uses acoustic change for the initial segmentation as mentioned above.

Burges however teaches a method for speaker segmentation and classification comprising a pre-processing step (Fig.5) and segmentation step where anchor model of speakers are assigned to a speech data (Fig.8) for associating the speech segments with the respective speaker (Par.0010-0015; Figs.1, 6-8, 14). The anchoring step is obvious in Gorin teaching, in view of Burges, for the purpose of accurately classifying/associating the speech segments by using anchor models for distinguishing between the speakers.

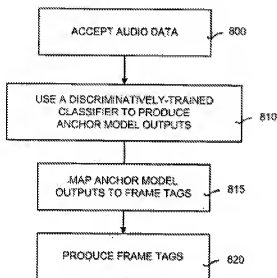


FIG. 8

As to claim 2, Burgees teaches where the anchor models is at least one of data related to a set of known speakers (Par.0010-0011).

As to claim 3, Burges teaches a model association step for scoring the segment against a statistical model of one of the speakers and obtaining score (Fig.14)

As to claim 4, Burges teaches where the scoring step uses discriminative training model (Fig.8, Par.0014).

As to claim 5, Gorin teaches scoring the initial segment against statistical model of one side and associating the segment based on the score (Fig.5).

As to claim 6, Gorin teaches where the scoring step includes normalizing the likelihood score (Col.8, lines 25-28) Burges also teaches a normalization module (Fig.6).

As to claims 7-8, Burges teaches using additional information where the additional information includes anchor models of speakers as addressed above. As to claim 9, Gorin teaches where the scoring comprises statistical scoring (Fig.3; Col.4, lines 5-35).

As to claims 10-11, Gorin teaches where the scoring is iteratively conducted until the difference between each iteration reaches below a specific/predetermined threshold value (Col.8, lines 25-32).

As to claims 13, Gorin teaches where the speech is parameterized into data more suitable for statistical modeling such as GMM model and anchoring step (initial segmentation step using additional information) and associating step for associating speech segments with at least one speaker (Col.7, lines 10-15; Col.4, line 6-12).

As to claim 14, the additional information that the system uses to help it associate speech segment is addressed in the claims above.

As to claim 15, a preprocessing step to enhance the speech signal will be inherent in Gorin teaching.

As to claim 16, Gorin teaches wherein the segmentation step includes identifying non speech segments (Col.6, lines 22-26).

As to claim 17, Burgees teaches wherein the segmentation step comprises comparing the segment with model of known speaker as pointed above.

As to claims 18-20, the corresponding speaker segmentation apparatus for performing the method of speaker segmentation as claimed in the method claims is analogous and therefore rejected by Gorin and in view of Burges for the foregoing reasons.

*With regard to the playback component, Gorin teaches where the unsupervised segmentation is used for indexing archived broadcast news program by speakers to facilitate browsing and retrieval of desired portion of broadcast news (Col.2, lines 3-8) therefore the playback component is inherent in Gorin system.*

***Allowable Subject Matter***

Claims 21-23 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

the recited anchoring steps in claims 21 and 23 are not taught or obvious in the prior arts of record.

***Response to Arguments***

Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel D. Abebe whose telephone number is 571-272-7615. The examiner can normally be reached on monday-friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Hudspeth can be reached on 571-272-7843. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Daniel D Abebe/  
Primary Examiner, Art Unit 2626